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# Metals and Machinery from Canada



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# Canada

at the  
**Western Metal  
and Tool Exposition**

**Stand No. 1505**

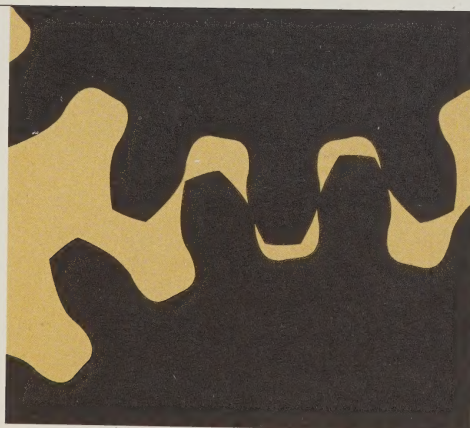
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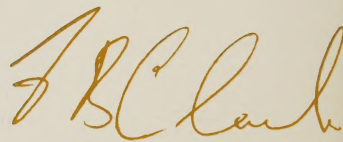
**Great Western  
Exhibit Center,  
Los Angeles**

**February 22  
to 26, 1965**



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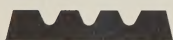
*Once again we take pleasure in welcoming you to the Canadian Exhibit at the Western Metal and Tool Exposition in the Great Western Exhibit Center, Los Angeles, February 22-26, 1965. This booklet lists the Canadian exhibitors and describes the outstanding machinery and equipment they have to offer. Representatives of the exhibiting companies and the Canadian Department of Trade and Commerce will be pleased to answer inquiries, and a representative of Canada's Department of Defence Production will be present to discuss questions relating to the Canada - United States Defence Production Sharing Program. Information on the full range of quality products and services available from Canada can be obtained at any time from this office or any of the other Canadian trade offices.*



*F. B. Clark  
Consul and Trade Commissioner  
Canadian Consulate General  
510 West Sixth Street  
Los Angeles 14, Calif.  
Tel: MAdison 2-2233 (Area Code 213)*

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# **Designed for Excellence,**

## **Produced with Pride**

**Canada's** growing reputation for specialist production of fine industrial metal products and custom-made machinery is reflected in the Canadian Exhibit at the Western Metal and Tool Exposition, Los Angeles, where products of leading Canadian companies are displayed.

As the industry behind industry, industrial equipment has a key position in Canada's domestic economy — and Canadian-made machinery is exported throughout the world.

Because Canada does not have the population to absorb great runs of standard off-the-shelf equipment, manufacturers have entered the specialty field — designing, developing and producing many types of unusual single-purpose equipment and machinery.

Wherever machinery must be custom designed for a particular job, versatile Canadian engineering produces the equipment efficiently and economically.

Products in the Canadian Exhibit show the traditionally high quality of workmanship and advanced techniques of an outstanding custom-machinery industry. Exports of heavy equipment from Canada have increased 90 per cent since 1961.

Canada is one of the world's largest producers of base metals, and Canadian metal products have a reputation for purity and excellence.

The metal producers at the Exposition are representative of an industry serving every facet of North American manufacturing.

Specialists in metallurgy will also be available at the Canadian Exhibit to answer questions and discuss metal problems.



## Baldrive

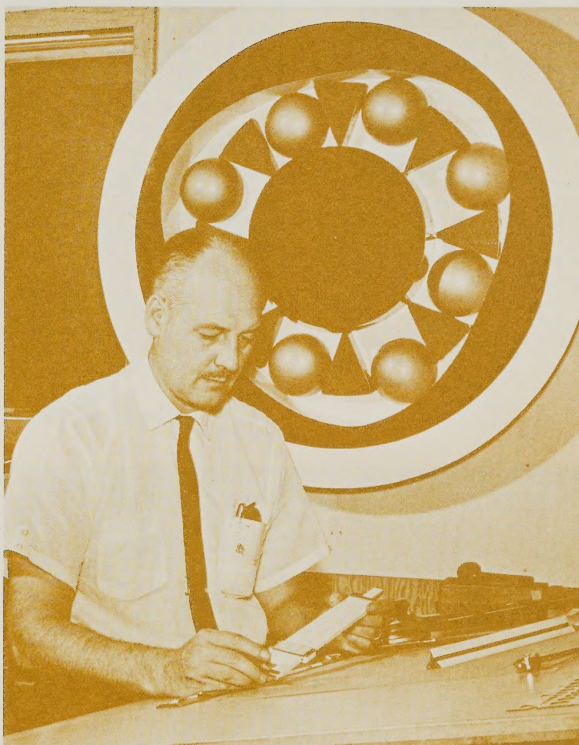
Division of Barrett  
Hydrostatics Ltd.  
East River Road  
Galt, Ontario, Canada

## variable hydraulic transmission systems

Genius behind Baldrive system is racing car designer and model engineer George Barrett of Galt, Ontario. He saw the potential 20 years ago and developed the system despite being told by fellow engineers it wouldn't work. Model of largest contemplated size is behind Barrett.



Baldrive, a division of Barrett Hydrostatics Ltd., manufactures transmissions in which the pump and motor operate on a system of reciprocating and rotating balls to provide 99 per cent volumetric and 90 per cent mechanical efficiency—in a smaller and lighter package than any other system. Baldrive—a Canadian invention—is a system for the transmission of rotary power by hydraulics. It requires no valves, auxiliary controls, high-cost piping, hoses, fittings or complex feedback. The system consists of four variations of a mechanically simplified radial piston pump motor. Since all hydraulic forces are internally opposed and balanced, the housings are not subject to hydraulic pressure and only low-pressure seals are required on a shaft.



Baldrive motors can be mounted in any position and any distance from their power source.

The motors function on pressures as low as 10 pounds per square inch. For most applications 1,000 psi is adequate. In some instances higher pressures may be desirable for compatibility with other equipment in the system.

The company is also developing a pressure intensifier which can be inserted in a hydraulic line to step up available pressure on demand. There are no external moving parts or controls. Intensifiers are in two sizes: No. 3 to handle up to 5 gpm input and No. 6 to handle up to 30 gpm. Ratios are available up to 6 to 1.

Baldrive motors will operate when immersed in water or other fluids and can be used in explosive or

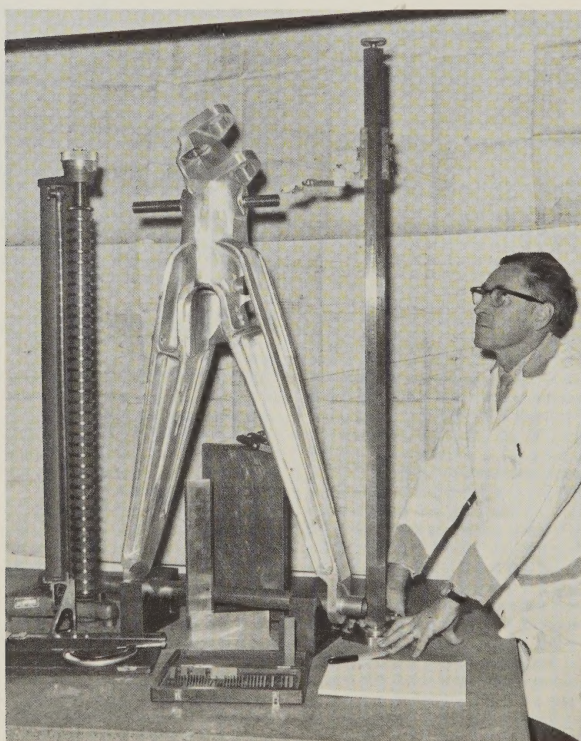
toxic atmospheres without danger. The variable speeds of the system produce an extremely flexible operation. Its simplicity of operation makes it economic. In many cases the complete system may weigh less than one pound per unit of horsepower.

The company will show a variety of Baldrive motors and pumps as well as a display model.



As specialists in close-tolerance custom milling, Bata Engineering uses the latest equipment for quality production. The company also machines cams for every application. High accuracy is achieved by skilled operators using the reliable Rowbottom cam-milling and grinding machines. The company also produces molds for rubber and plastics industries, a wide range of shoe machinery, mechanical and hydraulic die-cutting presses of the swing beam and traversing head type, thermoforming equipment for skin and blister packaging, and the Clicko-dex high-frequency machine press which welds and cuts in one operation such non-thermoplastic materials as leather, handboard and textiles.

Bata Engineering is a division of the Bata Shoe Organization, one of the world's largest manufacturers and retailers of footwear, with plants in 79 countries and more than 65,000 employees. Since World War II, Bata Engineering has established a reputation as a dependable sub-contractor supplying precision-engineered parts to leading aircraft and defence production companies in Canada and the United States, and other large organizations outside the defence field. Bata produces precision-machined components and assemblies for jet-powered and propeller-driven aircraft including hydraulics, pneumatics, landing gear members and other airframe structures.



This 45½ inch undercarriage fitting for the Kaman helicopter is one of the many aircraft components produced by Bata Engineering.





Canadian Special Machinery Company specializes in the design and precision manufacture of high-speed production machinery for the wire, cable and plastics industries.

In view of the strong trends towards automation in industry, the company's team of designers is producing a range of high-speed winding and handling equipment used in the manufacture of wires and cables.

On exhibit is a heavy-duty, 1,000-pound capacity high-speed winder which winds finished wire into coils and reels. This is part of a complete production line involving controlled tension pay-offs, high-voltage dielectric testers, measuring equipment and winders.

Length of coil is predetermined to

insure accurate finished sizes of coils. The wire covering is continuously tested and if defects are detected the coiler will stop automatically, signaling the operator that some discrepancy in tolerances has occurred.

This coiling line permits efficient production through the use of a single operator with all controls conveniently placed at the winding head. Tension is automatically set to maintain constant pull while winding at speeds up to 3,000 feet per minute.

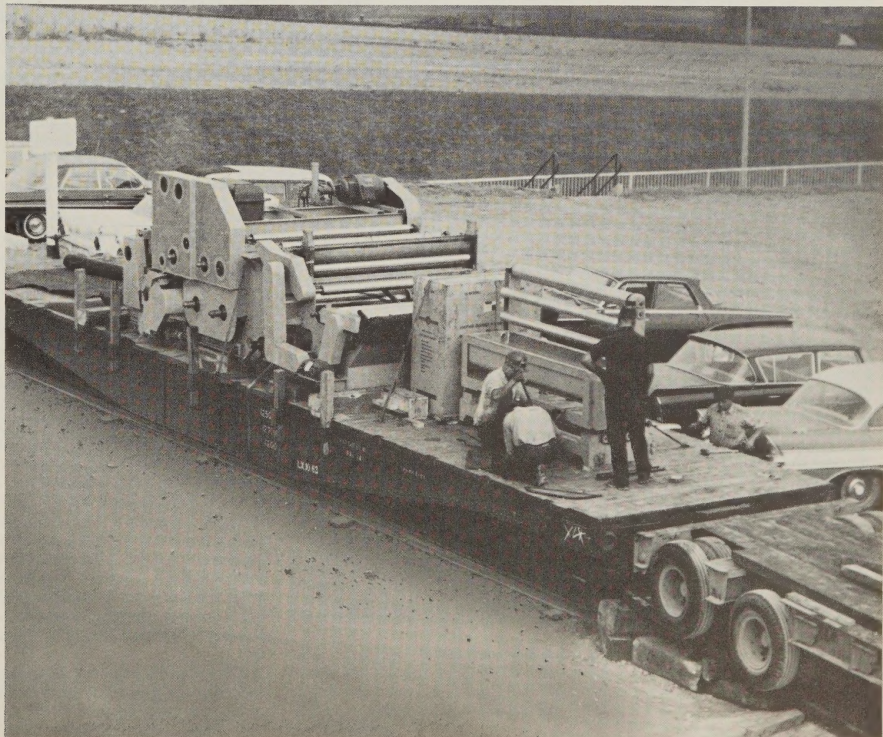
The main drive of the winder is adjustable in speed and provided with acceleration controls. Traverse for layer winding is infinitely adjustable to accommodate the various diameters of wire found in the electrical industry.

The company's specialization in the winding field enabled it to develop fully automated extrusion equipment for the manufacture of complete plastic film and sheet. It is now developing production of a specialized wire-drawing machine for the North American market.

A typical example of take-off equipment used in the film industry is the large embossing, trimming and winding machinery built by this company for the production of 80-inch wide polyvinyl chloride film.

Canadian Special Machinery is exporting to the United States and South America.

**A film-processing unit for embossing and winding 80-inch wide rolls of polyvinyl chloride film leaves the company's plant for delivery.**

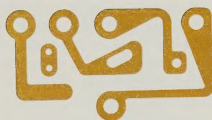




**Canadian Westinghouse  
Company Limited**

Electronics Division  
P.O. Box 510  
Hamilton, Ontario, Canada

**optical-electronic  
tracer system**



**Canadian Westinghouse's Linatrol HL4 tracing system is mounted here on a large flame-cutting machine.**

Established almost 70 years ago, Canadian Westinghouse Company Limited is among the largest electrical manufacturers in Canada, with more than 10,000 employees at 16 locations across the country and a total manufacturing area of more than 3,000,000 square feet. It also operates a research development laboratory which includes electrical, electronic, mechanical, chemical and metallurgical sections. The company exports to more than 40 countries. At the Exposition, Canadian Westinghouse displays its optical-electronic tracer system — the Linatrol HL4 co-ordinate control. This versatile system automatically controls the operation of a machine tool directly from a line drawing, projected image or shadow.

Linatrol HL4 is fully transistorized and uses plug-in printed circuits to reduce maintenance problems and lower maintenance costs.

Tracing speeds, depending on the machine to be controlled, are between 0 to 200 inches per minute. Widely used throughout the United States, Canada and Europe as a control for oxy-fuel and plasma-arc cutting machines, the Linatrol principle of operation has also been adapted to such diverse applications as industrial sewing and the positioning of welding electrodes in the automotive industry.

The Electronics Division of Canadian Westinghouse has successfully undertaken a wide range of projects. In one year alone, its design and development engineers produced a total of 51 patent disclosures in the techniques of radar, sonar, electroluminescence and microwave engineering.



**Dominion Aluminum  
Fabricating Limited**  
36 Coronet Road  
Toronto 18, Ontario, Canada

**telescopic helicopter  
hangars, aluminum  
containers**



Designed for use on ships and confined areas on land, a telescopic aluminum hangar from Dominion Aluminum Fabricating Limited protects helicopters from the corrosive effects of salt spray, smoke residue from ships' funnels, smog and other weather hazards. With this unit the same deck space is used as both a hangar to house and maintain the aircraft and as a landing platform.

The company pioneered and developed the telescopic hangar, the forward section of which serves as a workshop, where heat and light are provided for increased maintenance efficiency under adverse conditions.

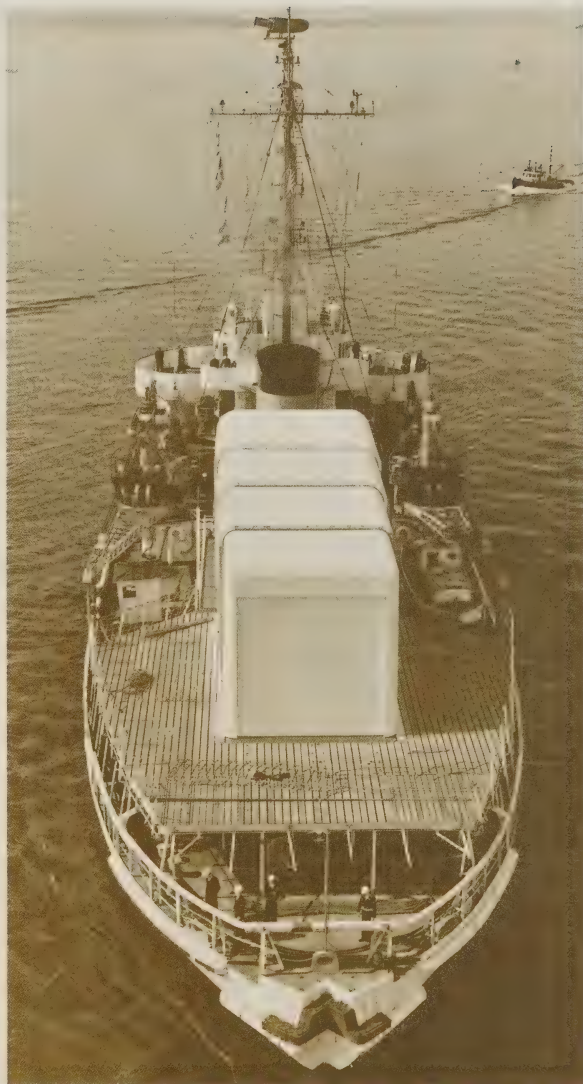
When the helicopter is to fly, the hangar retracts automatically on tracks for full clearance for lift-off. When the helicopter is to be stored, the rotor is aligned parallel to the fuselage and the retracted hangar extended and locked.

The hangars have been engineered to maintain a steady 60-degree Fahrenheit temperature inside when the outside reading is 40 degrees below zero. They have been tested on board Canadian icebreakers.

Fourteen of these hangars have been designed and built for the Canadian Coast Guard and another four were delivered to the Italian Navy. A variety of designs for different types of ships is available with dimensions as long as 150 feet and 68 feet wide. A unit recently produced for the U.S. Coast Guard measured 21 feet high, 23 feet wide and 70 feet long retracting into a housing 20 feet long.

DAF has also exported hangars to the United States and others are currently being designed for Germany, France, Holland and Norway.

In large cities where helicopters are used for commuting and carrying mail, the DAF hangars have a special application atop hotels, post offices and airports.

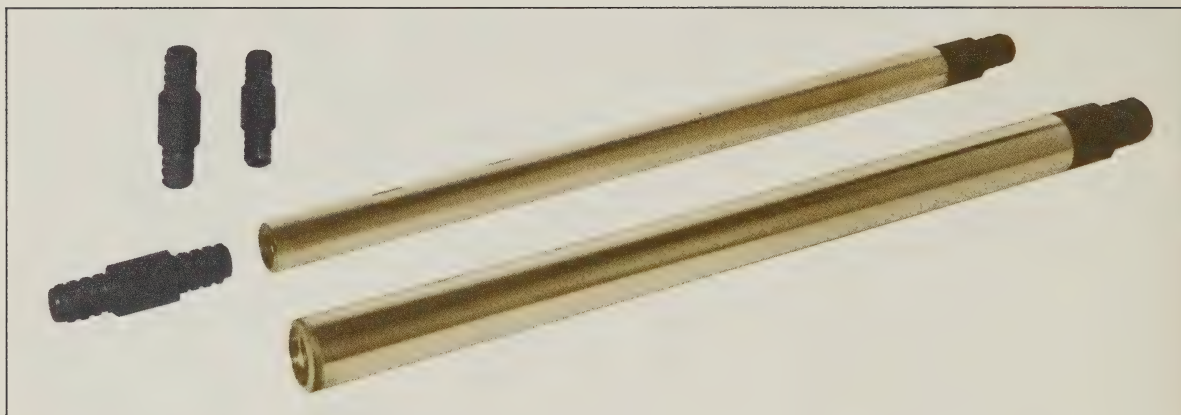


This seagoing telescopic hangar protects helicopters from the corrosive effects of salt water spray, smoke residue from funnels and foul weather.

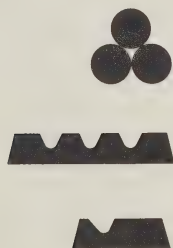
**Dominion Magnesium  
Limited**

7 King Street East  
Toronto 1, Ontario, Canada

**magnesium ingots;  
magnesium alloy ingots,  
billets and drill rods**



Magnesium diamond-drill rods one-quarter the weight of steel rods have proved efficient in drilling and exploration projects. Their light weight reduces transportation costs and simplifies drill core checking and other on-site handling.



Dominion Magnesium Limited manufactures, by the Pidgeon ferrosilicon process, magnesium metal of the highest purity from a white crystalline dolomite quarried in Ontario.

Magnesium and magnesium alloys are supplied as primary ingots, as billets for forging and extrusion and in the secondary forms of extruded shapes, tubes, rod, and bar.

A recent development is the magnesium alloy diamond-drill rod. This was a metallurgical challenge from the start, but in exacting field tests deep in rugged bush country the company demonstrated that a magnesium rod weighing only 500 pounds will drill to the same depth as one ton of steel. It is so light the savings in core recovery time, equipment weight, and in moving on the drill site are as important as the reduced freight costs.

The rods are already in use in several countries and in 1964, the company earned first award in the light metals category of the American Society for Metals materials award competition in Philadelphia.

The drill rod was manufactured by Aerometal Products and Design Limited, a fabricating division of Dominion Magnesium which produces a wide range of light metal structures in magnesium alloys. Ladders, scaffolds,

tent frames, dock boards and grain-handling equipment are some of the products manufactured by this division.

Dominion Magnesium has a production capacity of 10,000 tons of high purity magnesium and magnesium alloys. Calcium, strontium, barium metals and alloying grades of thorium and zirconium are also produced.

Magnesium weighs 112 pounds per cubic foot, compared with: aluminum, 175; steel, 449; brass, 530. It can be cast, extruded, machined, welded, turned or swaged.

Also in the company's display is a mobile flow-sheet diagram showing the method used to manufacture magnesium in Canada.

Dominion Magnesium is currently exporting to 30 countries, including every industrialized country in the free world.

**Represented by:**

Metal Hydrides Incorporated  
Congress Street  
Beverly, Mass.  
(for calcium metal and laboratory metals only)



## Domtar Chemicals Limited

Metal Powders Division  
1155 Dorchester Boulevard  
West  
Montreal 2, Quebec, Canada

## metal powders



Domtar Chemicals Limited, Metal Powders Division, is a major supplier of sponge-iron and iron-alloy powders. Its products are used extensively in the United States and other export customers include Australia, Brazil, Chile, Britain and Japan.

In a new, fully automated plant at LaSalle, Quebec, the firm produces uniform quality products for use in powder metallurgy, coating of welding electrodes, flame cutting and scarfing, and other uses.

The LaSalle plant finishes powder obtained from raw material produced at the company's Lachine, Quebec operation. It processes seven sponge-iron powders for powder metallurgy and three types of sponge-iron powders for

the welding electrode industry. One is a fine welding electrode flux material and variations in apparent density and screen analysis are made to customers' individual requirements at no extra cost. In the powder metallurgy category, Domtar's process lends itself to the production of pre-alloyed ferrous powders.

Other powders include one for cutting, scarfing and powder washing; a superfine powder for chemical and pharmaceutical applications and a mild steel powder for metal spraying processes. Atomized stainless and high-alloy steel powders for stainless-steel filters, powdered metal parts, metal spraying and other uses are available. These, and nickel-chrome alloys, monel and other

high-temperature metals are manufactured by B.S.A. Metal Powders Limited in England and distributed solely by the Metal Powders Division in Canada and the United States.

The Metal Powders Division participates in research and development through the Dominion Tar and Chemical Company Limited Research Center at Senneville, Quebec, where metallurgists study current and future uses of powder in this fast-developing industry.

### Represented by:

Gordon Sondraker & Associates  
Suite 401, 4802 Loma Vista Street  
Los Angeles, 90058, Calif.

In Domtar Chemicals' LaSalle plant this 30,000-lb blender maintains uniformity of product. Products are used in powder metallurgy, the welding electrode industry, for cutting, scarfing and powder washing, and for other purposes.





Dynacast Limited is displaying its fully automatic zinc die-casting machine for high precision miniature castings up to 1¼ ounces. It is used in any industry where high precision, speed, production flexibility and minimum maintenance costs are important. At a rate of 80 shots per minute, it will continuously produce precise, compact and accurate castings with an almost mirror surface finish. The machine checks itself and stops automatically whenever required tolerances are not met. One man can operate 12 machines.

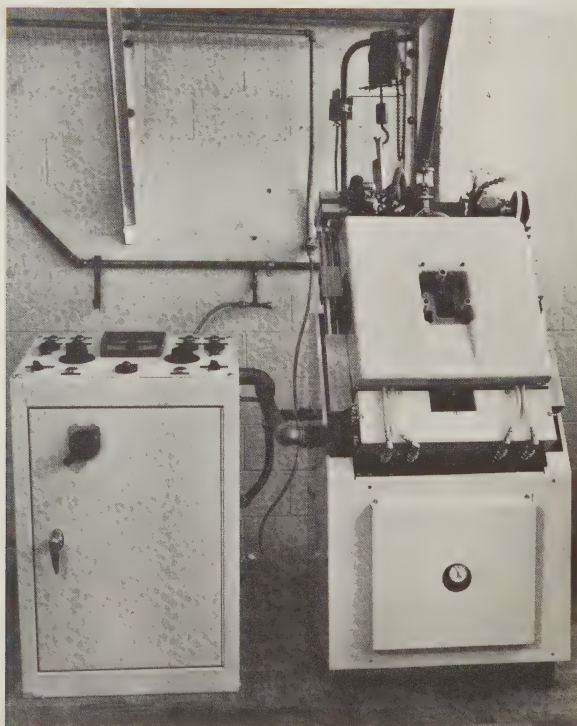
Features include the use of simple and inexpensive dies which can be changed in five minutes, automatic feed of preheated ingot, micrometric die and cores adjustment from outside the machine, automatic nozzle heat control, complete thermic insulation of the pot, clock operated switch and an independent, fully enclosed electric control cabinet. The design eliminates the possibility of air bubbles occurring in the nozzle and die cavities. Nozzle, plunger and sleeve can safely be changed from the outside without cooling or removing

the goose-neck. It operates at varying speeds at the touch of a knob and can be operated by hand sequence for the testing of new dies.

Weighing approximately 2,000 lbs., this die-casting machine — including the castings receiver — requires only 4' by 6' of floor space.

This machine is now successfully operating in important plants in Canada, the United States, Britain, and France.

The flexible, fully automatic Dynacast zinc die-casting machine for high precision miniature castings up to 1¼ ounces in weight.





## Joly Engineering Ltd.

8945 Park Avenue  
Montreal 11, Quebec, Canada

contractors for high  
precision mechanical  
components and  
assemblies



Established 20 years ago, Joly Engineering Ltd. now employs more than 100 shop employees in a modern 20,000-square-foot plant equipped with a selection of the finest machine tools.

The company makes components — from initial prototype to mass production — for sophisticated equipment used by government and private industry.

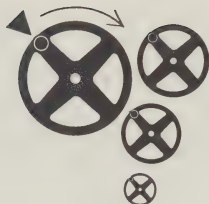
Joly's display consists of a variety of parts manufactured to customer specifications.

As a contracting machine shop for high precision work, the company manufactures AGMA Class 3 fine pitch gears and precision

gear boxes for aircraft, inertial guidance systems, range finding systems, flight simulators, doppler, automatic pilots, sonar equipment, and also gearing and spline work of all descriptions for aircraft engines and landing gears. In addition the company machines gyro components, wave guide components and performs automatic turning of precision small parts on Swiss automatic lathes.

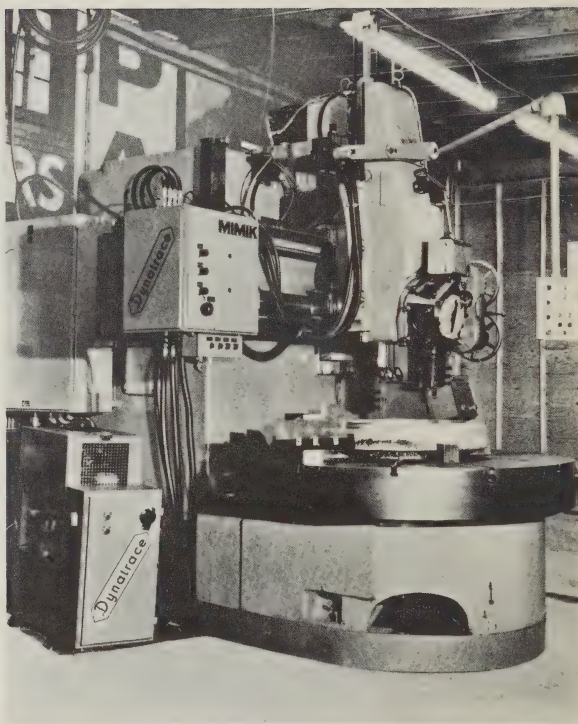
Joly Engineering also performs jig boring, precision grinding, thread grinding, centerless grinding, copy turning, three-dimensional milling, engraving and all standard machine shop functions.

**A line of high precision gear-cutting machines at the Joly Engineering Ltd. plant.**



Mimik Dynatrace for vertical turn lathes and turret lathes allows tracing of opposing 90-degree shoulders at constant surface feed rate. Key feature of this tracing system is repetitive accuracy with as little as six-ounce stylus pressure.

Mimik Limited, formerly Retor Developments Ltd., manufactures tracing systems designed for use on lathes, turret lathes, vertical turret lathes, and boring mills, vertical and horizontal milling machines, planers and shapers. The Mimik Slide Tracer features universal positioning to any angle, repetition within tenths and is easily adapted to engine lathes, turret lathes, and planers. The recent innovation of universal template bracketry has increased the portability of this unit — only additional adapter plates are required to interchange the tracer from one machine to another. The Mimik "human arm" principle, combined with front control of tool heads and valve-to-template positioning has considerably reduced tool indexing stages and multiple measuring steps in contour shaping of components. The Mimik Dynatrace system features 180 degrees of contouring at constant feed rate along either machine axis in either direction. It will trace left and right-hand 90-degree shoulders, turning or facing, in one pass. It will bore on



either side of center line. The stylus and template are always in full view of the operator, and a thermostatically controlled refrigeration oil cooling system ensures constant performance on close tolerance work.

Mimik Dynatrace converts engine lathes, turret lathes, vertical turret lathes and boring mills to two-axis 180-degree tracing by using the machine's existing slides. While one axis feeds, the other traces—the feed being modulated by the tracer to give a constant surface speed regardless of part geometry. Selection of trace and feed modes is made through a single eight-mode selector valve directly in front of the operator. The hydraulic motor drives used with Dynatrace exert extremely high torques, enabling the operator to take heavy cuts, and the

unique Mimik flow sensor system ensures positive feed shut-off on 90-degree shoulders.

Mimik Limited is a wholly owned Canadian company and has manufactured tracers since 1955. Approximately 80 per cent of the company's output is exported to the United States, Europe, Pakistan, India, Japan, Australia and Mexico. Mimik is currently opening up markets in South America. The company manufactures a wide range of tracer control systems. Availability of replacement parts, sales and service are on an around the clock basis throughout the world.

**Represented by:**  
Mimik Division  
Allied Pacific Manufacturing Corporation  
13727 Excelsior Drive  
Santa Fe Springs, Calif.



**Pierce-All  
Manufacturing Limited**

151 Belfield Road  
Rexdale, Ontario, Canada

**piercing and notching  
machine**

A new piercing and notching machine from Pierce-All Manufacturing Limited punches up to  $\frac{1}{4}$ " thickness of steel and has tool holders capable of using either the special line of Pierce-All tooling or standard tools of other makes.

The Perf-O-Mator features a new concept in hydraulic power systems making it possible to pierce holes at the rate of 120 a minute or more. It will perform a punching capacity of 25 tons in any material thickness up to  $\frac{1}{4}$ "—from  $\frac{1}{4}$ " diameter in  $\frac{1}{4}$ " plate to  $\frac{3}{2}$ " in  $\frac{3}{32}$ " plate.

The Perf-O-Mator features a patented tool holder system known as the Para-Flex arm containing three tool holders of varying capacity up to  $\frac{3}{2}$ " diameter for punching round or shaped holes. The die-locator ring and mechanisms for the movement and location of the back gauge assembly are contained in the main table assuring perfect alignment of punch and die.

Three swivel tool holders provide for tooling in the range of 0-1", 1-2", and 2-3 $\frac{1}{2}$ " holes or any shape within those diameters. Each holder revolves so that while one is in use, the others are swung to the back for storage. This tool holder system reduces punch cost considerably.

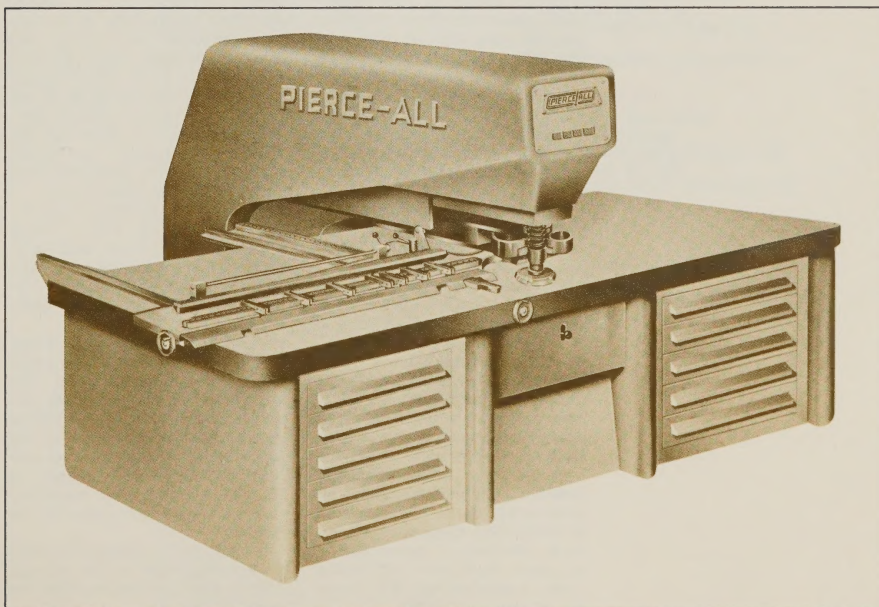
Perf-O-Mator comes with a 30" x 30" duplicator and a 48" side gauge bar.

The response to the duplicator stylus is so fast the operator cannot spoil work by jumping the cycle. The machine is also jam-proof. When the machine stalls, the tool head returns to the up position ready for the next stroke.

Shut height can be increased or decreased by turning a handle. Each 90-degree turn alters the height by 0.0156". This is of particular advantage when a punch has been sharpened and is shorter than the nominal shut height of the machine.



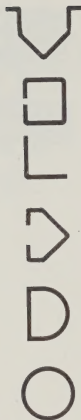
The Pierce-All Perf-O-Mator is a hydraulic system that will punch holes at the rate of 120 a minute or more. The machine is jam-proof and has a punching capacity of 25 tons in any material thickness up to  $\frac{1}{4}$ ".



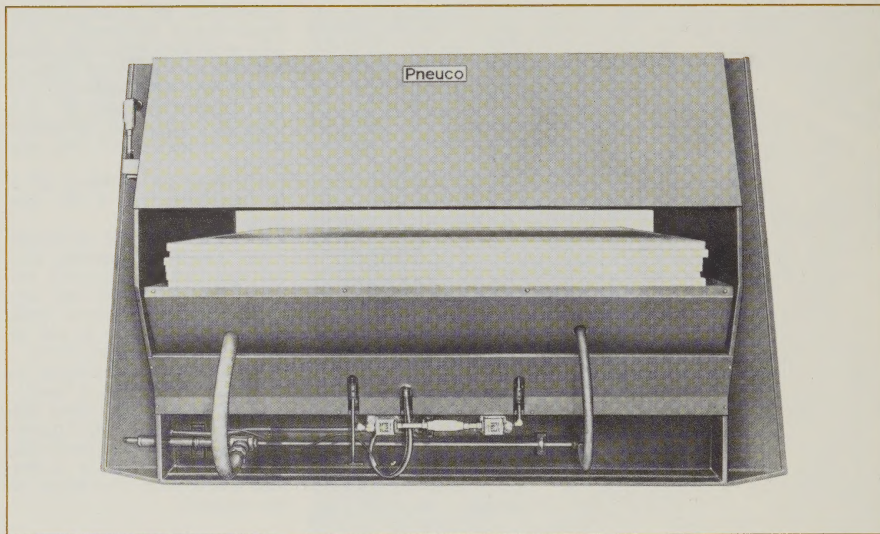
## Pneuco Machinery Company

394 Symington Avenue  
Toronto, Ontario, Canada

press brake



This new Pneuco die-cutting machine has just been released for export sales. Die cutter works on a pneumatic air-actuated principle to increase efficiency and lower job costs.



Based on a unique, patented air-actuated principle, an unusual press brake from Pneuco Machinery Company has earned wide recognition as an outstanding development in the field of sheet metal forming and bending. Since its introduction in early 1963, it has attracted international attention and proved itself in a varied range of industries in 22 countries.

The press brake's low-pressure air-actuated operation—without motor or hydraulic system—results in lower production costs. The pneumatic power ram permits precise controlled operation and produces uniform forming and bending of the highest quality.

Its compact simplicity of design streamlines operation and its exclusive upstroking action allows more control over work during all production processes, lowering rejections substantially. With this type of press brake, maximum speed is obtained throughout the stroke until the work is contacted. In production rates, Pneuco matches mechanical press brakes, surpasses hydraulic installations—and is substantially less expensive to buy than either.

The Pneuco press brake operates without vibration and the smooth effortless functioning of the system improves the quality and quantity of work done. Bending pressure is varied with fingertip control. Efficient operation of the machine is possible with air pressures ranging from 10 to 100 lbs. Faster operation is possible through flexible cycle allowing minimum stroke to be used.

At the Exposition, Pneuco displays its Model 1000-75 with a 75-ton capacity on a 120-inch bed. Fourteen smaller models are also manufactured, including a 15-ton, 52-inch unit ideal for on-site operations.

In addition to its press brake, Pneuco will exhibit its new pneumatic die-cutting machine. The application of the pneumatic air-actuated principle to die-cutting equipment enables the company to produce an efficient, simple machine that sells for as much as 75 per cent less than hydraulic or mechanical types now on the market.

The company has already sold the new machines in the United States, where market reaction has been impressive.

### Represented by:

Lewis Machinery Sales, Inc.  
207 S. Victory Boulevard  
Burbank, Calif.

Fuchs Machine & Supply  
2401 N. 11th Street  
Omaha, Neb.

Haven Machinery & Supply Co.  
950 E. 14th Street  
Oakland, Calif.

Hercules Corporation  
2148 E. Slauson Avenue  
Huntington Park, Calif.

Portland Machinery Co.  
208 S. W. First Avenue  
Portland 4, Ore.

Richard Ives Company  
P.O. Box 1406  
Salt Lake City, Utah

West Coast Machinery Co. Inc.  
719 S. Myrtle  
Seattle, Wash.

Equipment Sales & Manufacturing Co.  
Albuquerque, N.M.

Air Automation Machine Supply  
1840 Grand Avenue  
Phoenix, Ariz.



# information

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*Officials of the Canadian Department of Trade and Commerce and representatives of participating firms in the 1965 Western Metal and Tool Exposition at Los Angeles will answer inquiries from interested businessmen, and information is also available from the following Canadian trade offices.*

## Los Angeles

Consul and Trade Commissioner  
Canadian Consulate General  
510 West Sixth Street  
Los Angeles 14  
Tel: MADison 2-2233 (Area Code 213)

## Boston

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Canadian Consulate General  
607 Boylston Street  
Boston 16  
Tel: 262-3760 (Area Code 617)

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Suite 2000  
Chicago, Ill. 60604  
Tel: 427-7926 (Area Code 312)

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Tel: JUDson 6-2400 (Area Code 212)

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